

Sun Datacenter InfiniBand Switch 36

Product Notes for Firmware Version 2.0



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Using This Documentation

This document provide last-minute information regarding the installation, administration, and service of the Sun Datacenter InfiniBand Switch 36 from Oracle.

- “Related Documentation” on page v
- “Feedback” on page v
- “Access to Oracle Support” on page vi

Related Documentation

Documentation	Links
Sun Datacenter InfiniBand Switch 36 Firmware Version 2.0	http://docs.oracle.com/cd/E26698_01
Oracle Integrated Lights Out Manager (ILOM) 3.0	http://docs.oracle.com/cd/E19860-01
All Oracle products	http://docs.oracle.com

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Sun Datacenter InfiniBand Switch 36 Product Notes

These product notes provide last-minute, late-breaking information regarding the switch. These notes pertain to the release of the 2.0.8-1 firmware for the switch.

Known Problems

The following table describes known problems with the switch.

Bug	Description	Workaround
15560533	Setting an alert rule to <code>ipmipet</code> sometimes does not work.	There is no impact to the InfiniBand fabric. Workaround: After setting the alert rule to <code>ipmipet</code> , set the level to <code>disable</code> , and then set the level to the desired value.
15667851	Time zone setting is not preserved.	When upgrading from or downgrading to the 1.1.3 firmware version, the time zone setting is lost. Workaround: Reconfigure the time zone setting after the firmware upgrade or downgrade. Refer to <i>Switch Administration Guide</i> , setting the time.
15696509	IP addresses within the Subnet Manager nodes file does not match those assigned by DHCP.	By default, the DHCP server is not assured to assign a consistent IP address to a Subnet Manager node upon reboot. Workaround: Manually configure the DHCP server to assign a specific and unique IP address to each Subnet Manager node.
15703751	No way to set Fabric Monitor console timeout.	The Fabric Monitor will timeout after 15 minutes of idle time. Workaround: You must login to the web interface and launch the Fabric Monitor again.

Bug	Description	Workaround
15747266	Fabric Monitor does not support Internet Explorer.	Though the Oracle ILOM web interface supports Internet Explorer, the Fabric Monitor does not. Workaround: Use Mozilla Firefox 3.0 or 3.6.
15747583	Oracle ILOM web interface not compatible with Mozilla Firefox 6.0.	Using the Mozilla Firefox 6.0 browser, only navigational control is possible with the Oracle ILOM web interface. No informational output is displayed. Workaround: Use Mozilla Firefox 3.0 or 3.6.
15747938	<code>smpartition start</code> command gives unclear message if the Subnet Manager is disabled.	If the Subnet Manager is disabled before starting a partition configuration session using the <code>smpartition start</code> command, confusing messages are displayed upon issuing the command. Workaround: Ensure that the Subnet Manager is enabled before starting a partition configuration session.
15755116	<code>checkguidfilesftree</code> is displayed with the <code>help all</code> command, but is not supported.	Using the <code>help all</code> command within the Oracle ILOM <code>/SYS/Fabric_Mgmt</code> target displays the <code>checkguidfilesftree</code> command. This command has been deprecated and is not available.
15755133	<code>fdconfig</code> command is unavailable from the <code>/SYS/Fabric_Mgmt</code> target.	The <code>fdconfig</code> command is required for configuring the FabricMIB and should be available from the Oracle ILOM <code>/SYS/Fabric_Mgmt</code> target. The command is not available. Workaround: Log in as the root user, where the <code>fdconfig</code> command is available.
15755727	Need tool to display InfiniBand topology with physical InfiniBand entities.	At present, no command provides InfiniBand fabric GUIDs, LIDs, and IB ports relationship to each other in a simplified manner. Workaround: Use the <code>ibnetdiscover</code> command.
15758329	Stopping or starting the <code>envd</code> daemon initiates a segmentation fault for the FabricMIB.	Stopping or starting the environment daemon on a switch running as a fabric manager or monitored by a fabric manager changes the FabricMIB configuration due to the new status of that fabric element. Should an <code>smpwalk</code> of the FabricMIB be issued at the same time the FabricMIB library reloads the updated configuration, internal file pointers might be mishandled, initiating a segmentation fault. There is no workaround at this time.
15758406	Fabric Monitor might fail to load.	During a firmware upgrade or downgrade, certain symbolic links might not be created or become lost. Consequently, the Fabric Monitor will fail to load when requested. Workaround: Reperform the upgrade or downgrade, using the <code>-force</code> option.

Hardware Information and Issues

▼ Service an Undervoltage Condition

If a power supply experiences a temporary brownout or undervoltage condition, the `checkpower` command might indicate an `Alert` status for the power supply. The `Alert` does not reset upon supply voltage returning to nominal values. If the `checkpower` command reports an `Alert`, yet supplied voltage is known to be sufficient, perform the following task.

1. Remove the power cord from the suspect power supply.
2. Remove the power supply from the switch chassis.
3. Wait for 1 minute.
4. Install the power supply into the switch chassis.
5. Attach the power cord to the power supply.

Note – If the `checkpower` command still displays an `Alert` status for the power supply, refer to *Switch Administration Guide*, troubleshooting the switch, to troubleshoot the power supply.

Supported Fan Configuration

For optimum thermal management, ensure that the three fans shipped with your switch are installed at the central fan slots, Fan 1, Fan 2, and Fan 3. Installing any one of the three fans in fan slots Fan 0 or Fan 4 is not supported.

Software Information and Issues

Main Board, Management Controller, and Chassis Serial Numbers

The switch documentation describes how to retrieve the chassis serial number using the `showfruinfo` command or the `/SYS/MB` Oracle ILOM target. These methods actually display the serial number of the main board and the management controller respectively, and not the switch chassis. The switch chassis serial number is provided on the pull-out tab on the left side front of the switch chassis, adjacent to power supply 0.

Firmware Version Numbers

When upgrading the management controller firmware, the procedure uses the variables x , y , z , and w in filename strings to identify the version number. For this release of the firmware, 2.0.8-1, the values are as follows:

- x is 2
- y is 0
- z is 8
- w is 1

Time Zone Support

The following time zones are only supported in firmware versions 1.3.4, 2.0.7-2, and 2.0.8-1. If you upgrade or downgrade to a firmware version other than 1.3.4, 2.0.7-2, or 2.0.8-1 you must set an alternative time zone.

- America/Argentina/Salta
- America/Argentina/San_Luis
- America/Bahia_Banderas
- America/Kralendijk
- America/Lower_Princes
- America/Matamoros
- America/Metlakatla

- America/North_Dakota/Beulah
- America/Ojinaga
- America/Santa_Isabel
- America/Santarem
- America/Sitka
- Antarctica/Macquarie
- Asia/Ho_Chi_Minh
- Asia/Kathmandu
- Asia/Kolkata
- Asia/Novokuznetsk
- Pacific/Chuuk
- Pacific/Pohnpei

Firmware Update Considerations

If you are going to downgrade the firmware to a version earlier than 2.0, you must remove user partitions and depopulate the Subnet Manager nodes list. Refer to *Switch Administration*, removing partitions for firmware downgrade.

If you are going to downgrade from firmware 2.0.x to 1.3.4_1 or earlier, you might see these type of messages in the `/var/log/message` file after the downgrade:

```
lda: Unknown config parameter: ErrLogCount=100; .
lda: Unknown config parameter: ErrLogTimeInterval=100; .
```

The `ErrLogCount` and `ErrLogTimeInterval` configuration parameters introduced in firmware 2.0.x are unknown to firmware version 1.3.4-1 and earlier LDAs. The LDA logs these messages and ignores them from there on. The messages appear once per LDA startup and are harmless.

If you later upgrade from firmware 1.3.4-1 to 2.0.x and the `ErrLogCount` and `ErrLogTimeInterval` configuration parameters are absent, the 2.0.x LDA uses the compiled default values. Consequently, no LDA messages regarding these configuration parameters are recorded.

High Availability in Partitions

To allow communication fail-over between HCAs belonging to the same operating system instance, the HCA ports must be members of the same partition and have identical membership type (full or limited).

Having both full and limited port memberships within a partition for the same operating system instance creates a configuration instability that might cause subtle communication problems.

Email Alert Rules

It is mandatory to specify the value for the `email_custom_sender` property of an email alert rule. It does not use the `custom_sender` property of the `/SP/clients/smtp` target.

Commands Available to Restricted Linux Shells

Typing `help all` within either the `/SYS/Switch_Diag` or `/SYS/Fabric_Mgmt` restricted Linux shells lists the commands available to those shells.

In the output, the `checkguidfilesftree` command is listed, however, the command is not supported.

Conversely, the `fdconfig` command is not listed in the output, but is supported by the `/SYS/Fabric_Mgmt` restricted Linux shell.

Documentation Information and Issues

`smpartition` Command Guidelines

When partitioning the InfiniBand fabric with the `smpartition` command, consider these guidelines during the configuration session:

- Valid `P_Keys` for partitioning are `0x1` through `0x7fff`. However, both `0x1` and `0x7fff` are predefined `P_Keys` and cannot be created or deleted with the `smpartition` command.
- Default entries (ports) in the predefined partitions cannot be removed. However, when you add ports into the predefined partitions using the `smpartition add` command, the added ports take precedence over the default `ALL_SWITCHES` and `ALL_CAS` port groupings.

- The SELF and ALL port groupings are not supported by the `smpartition` command. To specify all ports for a partition use the ALL_SWITCHES port grouping in conjunction with the ALL_CAS port grouping in the `smpartition add` command.
- To remove the `ipoib` flag from a partition, use the `smpartition modify -flag` command without any additional arguments. The command removes the `ipoib` flag successfully, but erroneously issues this warning:


```
Missing port parameter
Could not modify partition.
```
- If there is a Sun Network QDR InfiniBand Gateway Switch in your subnet, consider this – If you use EoIB and VNIC functionality in a nondefault partition, you must specify the appropriate BridgeX chips' InfiniBand port GUIDs of the gateway to the partition.

When you know the VNIC's Ethernet connector, this table provides the respective BridgeX chip's portname.

Ethernet Connector	BridgeX Portname
0A-ETH-1	Bridge-0-2
0A-ETH-2	Bridge-0-2
0A-ETH-3	Bridge-0-1
0A-ETH-4	Bridge-0-1
1A-ETH-1	Bridge-1-2
1A-ETH-2	Bridge-1-2
1A-ETH-3	Bridge-1-1
1A-ETH-4	Bridge-1-1

When you know the Portname, you can look in the output of the `showgwports` command for the respective PortGUID. Using the table and the `showgwports` command together, when you know the Ethernet connectors used for your VNICs, you can find the respective BridgeX chip's InfiniBand port GUIDs to add to the nondefault partition.

Declaration of Conformity

To receive a copy of the latest Declaration of Conformity for the switch, either contact your local Oracle sales representative or create an online request at the following URL:

SNMP V3 Protocol Passwords

In sections of *Switch Remote Management*, authentication and privacy passwords are described for SNMP service user accounts and SNMP V3 protocol commands. For the user accounts and commands, the MD5 and SHA authentication passwords are 8 to 12 characters in length, and the DES privacy password must be exactly 8 characters long.

Upgrading the Switch Firmware

In *Switch Remote Management*, firmware version numbers are provided as *x.y*, *x.y.z*, and *x.y.z-w*. Currently, these numbers are 2.0, 2.0.8, and 2.0.8-1 respectively. The following two procedures describe how to acquire and upgrade the firmware through the Oracle ILOM CLI.

Note – The switch must have at least version 1.1.3 firmware installed before the two following procedures can be used. Refer to *Switch Remote Management*, installing the firmware, for more information.

▼ Acquire the Switch Firmware Package (CLI)

1. **Open a web browser on a host that is on the same Ethernet network as the management controller to receive the firmware update.**

2. **Go to this URL.**

<http://support.oracle.com>

Oracle's My Oracle Support page is displayed.

3. **Sign in if you already have an account.**

The dashboard page is displayed.

Note – If you do not have an account, you must register.

4. **Click the Patches & Updates tab.**

The Patches and Updates page is displayed.

5. **In the Patch Search window, click the Search tab.**
The Patch Search window updates.
6. **Click the Product or Family (Advance) link.**
The Patch Search window updates.
7. **In the Product Is drop-down menu, select Sun Datacenter InfiniBand Switch 36.**
8. **In the Release Is drop-down menu, select Sun Datacenter InfiniBand Switch 36 *x.y.z*.**
Where *x.y.z* is the version number of the firmware package to be acquired. For example, 2.0.8.
9. **Click outside of the drop-down menu.**
10. **Click Search.**
The Patch Search window expands with the search results.
11. **In the Patch Name column, click the respective patch number link.**
For example, 16294964. The Patch Search window reformats.
12. **Click Read Me to display the README file.**
13. **Click Download.**
The File Download window opens.
14. **Click the *filename.zip* link to initiate the download.**
For example, p16294964_208_Generic.zip.
15. **Indicate where the file should be saved.**
The file is downloaded and saved.
16. **In your receiving directory, decompress the *filename.zip* file.**
The firmware is in the SUN_DCS_36p_x.y.z.tar.gz file.
The README file contains the latest information about the firmware release.
17. **Unpack the .gz file.**

```
$ gtar -zxvf SUN_DCS_36p_x.y.z.tar.gz
```

The extracted files are displayed.

18. **Move the switch firmware package (*filename.pkg*) to a directory on a host that is accessible by Oracle ILOM.**
19. **Upgrade the switch firmware.**
See [“Upgrade the Switch Firmware \(CLI\)”](#) on page 10.

▼ Upgrade the Switch Firmware (CLI)

Note – If you are going to downgrade the firmware to a version earlier than 2.0, you must remove user partitions and depopulate the Subnet Manager nodes list. Refer to *Switch Administration*, removing partitions for firmware downgrade.

1. **Open an SSH session as user `root` and connect to the management controller by specifying the controller's host name.**

For example:

```
% ssh -l root switch_name
root@switch_name's password: password
#
```

where *switch_name* is the host name of the management controller. Initially, the *password* is changeme.

2. **If the Subnet Manager is running on the management controller, disable the Subnet Manager with the `disableesm` command.**

```
# disableesm
Stopping partitiond daemon.                [ OK ]
Stopping IB Subnet Manager..                [ OK ]
#
```

3. **Verify that there is at least 80 MB available in the `/` filesystem.**

```
# df -h /
Filesystem      Size  Used Avail Use% Mounted on
/dev/hda2       471M  276M  172M  62% /
#
```

In this example, there are 172 MB available. If not enough space is available, you must delete or move files from the `/` filesystem.

4. **Verify that there is at least 120 MB available in the `/tmp` directory.**

```
# df -h /tmp
Filesystem      Size  Used Avail Use% Mounted on
tmpfs           250M  240K  249M  1% /tmp
#
```

In this example, there are 249 MB available. If not enough space is available, you must delete files from the `/tmp` directory.

5. Verify that there is at least 120 MB free memory available.

```
# free -m
      total        used         free       shared    buffers     cached
Mem:      498         104         393           0          12         47
-/+ buffers/cache:
Swap:      0           0           0
```

In the `-/+ buffers/cache:` row of the `free` column, there should be at least 120 MB free memory. In this example, there are 453 MB available. If not enough memory is available, you must exit nonessential applications that are running.

6. Start the Oracle ILOM shell.

```
# spsh
Oracle(R) Integrated Lights Out Manager
Version ILOM 3.0 r47111
Copyright (c) 2010, Oracle and/or its affiliates. All rights reserved.
->
```

You are now in the Oracle ILOM shell.

You can use the `exit` command to return to the Linux shell.

7. Begin the upgrade process.

```
-> load -source URI/pkgname
```

where:

- *URI* is the uniform resource indicator for the host where the switch firmware package is located. The FTP and HTTP protocols are supported.
- *pkgname* is the name of the firmware package in the transfer directory.

For example, using the FTP protocol:

```
-> load -source
ftp://root:changeme@123.45.67.99//tmp/sundcs_36p_repository_2.0.8_1.pkg
Downloading firmware image. This will take a few minutes.
```

Note – If you are upgrading from firmware version 2.0.X, you can use the `-force` option to disable version number checking, and force the upgrade.

The firmware is downloaded. The upgrade begins. A caution is displayed, and you are asked to commit to the upgrade.

```
NOTE: Firmware upgrade will upgrade firmware on SUN DCS 36p firmware.
      ILOM will enter a special mode to load new firmware. No other tasks
      should be performed in ILOM until the firmware upgrade is complete.
```

```
Are you sure you want to load the specified file (y/n)?
```

8. Answer `y` to the prompt to commit to the upgrade.

The upgrade begins.

```
Setting up environment for firmware upgrade. This will take few minutes.
Starting SUN DCS 36p FW update
```

```
=====
Performing operation: I4 A
=====
I4 fw upgrade from 7.3.0(INI:4) to 7.4.1010(INI:4):
Upgrade started...
Upgrade completed.
INFO: I4 fw upgrade from 7.3.0(INI:4) to 7.4.1010(INI:4) succeeded
```

```
=====
Summary of Firmware update
=====
I4 status          : FW UPDATE - SUCCESS
I4 update succeeded on : A
I4 already up-to-date on : none
I4 update failed on  : none
```

```
=====
Performing operation: SUN DCS 36p firmware update
=====
SUN DCS 36p upgrade from 1.3.3-2 to 2.0.8-1:
Upgrade started...
Upgrade completed.
INFO: SUN DCS 36p upgrade from 1.3.3-2 to 2.0.8-1 succeeded
```

```
Firmware update is complete.
```

```
ILOM will be restarted and will take 2 minutes to come up.
You will need to reconnect to Integrated Lights Out Manager.
```

```
Stopping any already executing ILOM daemons
Starting event manager
Starting log manager
Starting ILOM IPMI stack
Started ILOM IPMI stack
Starting lumain
Starting luproxy
Starting ealertd
Starting web server
Starting SNMP
#
```

9. Reboot the switch to enable the new firmware.

Refer to *Switch Administration*, restarting the entire switch.

Note – The restart process takes between 4 to 5 minutes to complete. The Oracle ILOM stack requires at least 2 minutes to become operational after a reboot.

10. If the Subnet Manager was previously disabled, log in as the root user and enable the Subnet Manager.

```
% ssh -l ilom-admin switch_name
ilom-admin@switch_name's password: password
-> show /SP/Fabric_Mgmt
NOTE: show on Fabric_Mgmt will launch a restricted Linux shell.
      User can execute switch diagnosis, SM Configuration and IB
      monitoring commands in the shell. To view the list of commands,
      use "help" at rsh prompt.

      Use exit command at rsh prompt to revert back to
      ILOM shell.
FabMan@switch_name->enablesm
Starting IB Subnet Manager.                [ OK ]
Starting partitiond daemon.                [ OK ]
FabMan@switch_name->
```

11. Verify the firmware version.

```
FabMan@switch_name->version
SUN DCS 36p version: 2.0.8-1
Build time: Feb  6 2013 09:09:09
SP board info:
Manufacturing Date: 2009.12.08
Serial Number: "NCD4I0133"
Hardware Revision: 0x0006
Firmware Revision: 0x0102
BIOS version: NOW1R112
BIOS date: 04/24/2009
FabMan@switch_name->
```

In the first line of the output is SUN DCS 36p version $x.y.z-w$, where $x.y.z-w$ is the version of the firmware upgraded (or downgraded). For example, 2.0.8-1.

12. Verify the firmware integrity.

```
FabMan@switch_name->fwverify
Checking all present packages:
..... OK
Checking if any packages are missing:
..... OK
Verifying installed files:
..... OK
FabMan@switch_name->
```